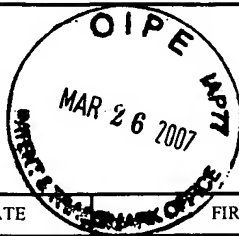




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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/613,936      | 07/02/2003  | Sang Keun Lee        | 2060-3-45           | 6785             |

7590 03/16/2007  
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Los Angeles, CA 90012-2001

|          |
|----------|
| EXAMINER |
|----------|

CHAN, SAI MING

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2609     |              |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 03/16/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/613,936             |  | LEE, SANG KEUN      |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Sai-Ming Chan          |  | 2609                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/16/2005, 1/19/2007</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 9/16/2005 and 1/19/2007 have been considered by the Examiner and made of record in the application file.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1 and 4-6** are rejected under 35 U.S.C. 102(e) as being anticipated by **Barbara et al. (U.S. Patent # 5581704)**.

Consider **claim 1**, Barbara et al. clearly show and disclose a mobile client terminal (fig. 1 (12a); column 3, lines 35-38) for maintaining transaction cache consistency (column 3, lines 35-38) in a mobile communication network (fig. 1), the mobile client terminal in communication with a mobile server (fig. 1 (10a); column 3, lines 35-38) configured to periodically broadcast an invalidation report (IR) message (abstract lines 7-9; column 2, lines 59-64), wherein the mobile client terminal updates data stored in a transaction cache (fig. 2 (104, 106, 108 & 110)) based upon information included in the IR message (column 2, lines 59-64), and confirms execution of a transaction (fig. 3b; column 6, lines 25-27).

Consider **claim 4**, and **as applied to claim 1 above**, Barbara et al. clearly show and disclose the mobile client terminal, wherein the IR message comprises: a broadcast time stamp for indicating a broadcast time (fig. 4a (152); column 8, lines 1-2); updated data (fig. 4a(156); column 8, lines 5-14); and an update time stamp of a transaction confirming the updated data (fig. 4a (154); column 8, lines 14-18).

Consider **claim 5**, and **as applied to claim 1 above**, Barbara et al. clearly show and disclose the mobile client terminal, wherein at least one data is associated with the transaction (fig. 3b (216)), the data having a time stamp (fig. 4b (172 timestamp of datum)), wherein: if the data associated with the transaction has a time stamp identical to time stamps of other data associated with the transaction, the mobile client terminal

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immediately confirms the transaction (fig. 4b (164, 172, 174 & 168)); and if the data associated with the transaction does not have a time stamp identical to time stamps of other data associated with the transaction, the mobile client terminal defers confirming the transaction until another IR message received by the mobile client (fig. 4b (fig. 3b (214, 226); column 6, lines 26-40).

Consider **claim 6**, and **as applied to claim 1 above**, Barbara et al. clearly show and disclose the mobile client terminal, wherein data stored in the transaction cache is associated with a cache time stamp (fig. 4b (172); column 8, lines 32-38), and wherein if execution of the transaction updates the data, the mobile server updates the cache time stamp (fig. 4b (174); column 8, lines 44-50).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

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2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness

or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 3, 7-11, and 13-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Barbara et al. (U.S. Patent # 5581704)**, in view of **Krishnamurthy et al. (U.S. Patent # 6578113)**.

Consider **claim 3**, and **as applied to claim 1 above**, Barbara et al. clearly show and disclose the mobile client terminal (fig. 1 (12a); column 3, lines 35-38), wherein the mobile server (fig.1 (10a); column 3, lines 35-38) comprises: an IR module for periodically broadcasting the IR message (abstract lines 7-9; column 2, lines 59-64);

However Barbara et al. does not specially show that the situation when data is requested by another mobile client. In the same field of endeavor, Krishnamurthy et al. clearly shows a data set providing module for providing data to the mobile client terminal in response to an immediate caching request from the mobile client (fig. 3; column 3, lines 51-67; column 4, lines 1-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle data request from another mobile terminal, as taught by Krishnamurthy et al., in order to provide data consistency in the network.

Consider **claim 7**, Barbara et al. clearly show and disclose a method for maintaining transaction cache consistency (column 3, lines 35-38) for a mobile terminal (fig. 1 (12a); column 3, lines 35-38) in a mobile communication environment (fig. 1), comprising the steps of: updating data stored in a cache (fig. 2 (104, 106, 108 & 110)) of the mobile terminal in response to receiving an invalidation report (IR) message; and confirming the transaction.

However Barbara et al. does not specially disclose read-only transaction that request data. In the same field of endeavor, Krishnamurthy et al. clearly shows the execution of read-only data (fig. 3; column 3, lines 51-67; column 4, lines 1-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the

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time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 8**, and **as applied to claim 7 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, wherein the IR message is periodically broadcast by a mobile server ((abstract lines 7-9; column 2, lines 59-64), wherein the IR message comprises: a broadcast time stamp (fig. 4a (154 current time); column 8, lines 1-2); updated data (fig. 4a (156 datum); column 8, lines 2-6); and an update time stamp (fig. 4a (156 timestamp); column 8, lines 2-6) associated with the updated data.

Consider **claim 9**, and **as applied to claim 8 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, wherein the update time stamp indicates when the updated data was last confirmed (fig. 4a (156 datum); column 8, lines 2-6).

Consider **claim 10**, and **as applied to claim 7 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, wherein the step of updating data stored in the cache comprises: deleting data stored in the cache (fig. 3b (226)), if the IR message is not received within a broadcast period (fig. 3b (214)); comparing an update time stamp of data received in the IR message with a cache time stamp of corresponding data stored in the cache, if the data received in the IR message



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is already stored in the cache and the IR message is received within the broadcast period (fig. 4b (172); column 8, lines 28-38 ); and replacing data stored in the cache with the data received in the IR message and associating with the data received in the IR message a cache time stamp equal to a broadcast time stamp of the IR message, if the update time stamp of the data received is after the cache time stamp of corresponding data stored in the cache (fig. 4b (164, 172, 166 & 168); column 8, lines 44-55).

Consider **claim 11**, and **as applied to claim 7 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, further comprising preventing execution of the transaction associated with data invalidated in accordance with the IR message (fig.3b (214,226); column 6, lines 32-40).

However Barbara et al. does not specially the read-only transaction that request data. In the same field of endeavor, Krishnamurthy et al., clearly show the execution of read-only data (fig. 3; column 3, lines 51-67; column 4, lines 1-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 13**, and **as applied to claim 7 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method as described. However, Barbara et al., does not specifically show a read-only transaction.

In the same field of endeavor, Krishnamurthy et al., clearly show in the read-only transaction, if the read-only transaction does not include data invalidated based on the

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IR message (fig. 3 (302, 303, 304)), confirm the transaction; and if the read-only transaction includes data invalidated based on the IR message (fig. 3 (303, 305)), cancel the transaction.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 14**, Barbara et al., clearly show and disclose a method for updating transaction cache consistency (column 3, lines 35-38) in a mobile communication environment, the method comprising the steps of: periodically broadcasting an invalidation report (IR) message (abstract lines 7-9; column 2, lines 59-64) from a mobile server (fig.1 (10a)) to a mobile client (fig. 1 (12a));

However, Barbara et al. do not specially disclose a read-only transaction. In the same field of endeavor, Krishnamurthy et al., clearly show a read-only transaction which comprises a request for data (fig. 3 (301); column ), by using an optimistic concurrency control with timestamp span (OCC-UTS.sup.2) protocol (column 5, lines 30-36 (today's data accessing protocol)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

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Consider **claim 15**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method as described. However, Barbara et al., fails to show a read-only transaction.

In the same field of endeavor, Krishnamurthy et al., clearly show the step of executing the read-only transaction comprises: determining whether requested data is stored in a transaction cache (fig. 3 (302)); processing the requested data in the transaction cache, if the requested data is stored in the cache (fig.3 (302, 303 304)); and retrieving the requested data from a mobile server, if the requested data is not stored in the transaction cache (fig. 3 (302, 305)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 16**, and **as applied to claim 15 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, wherein the requested data stored in the transaction cache (fig. 4b (162)) is associated with a cache time stamp (fig. 4b (172 (time stamp of datum))), the method further comprising: receiving an IR message associated with the requested data (fig. 3b (212), wherein the IR message includes corresponding data associated with an update time stamp (fig. 3b (214); column 6, lines 25-40); selecting the requested data stored in the transaction cache, if the update time stamp matches the cache time stamp (fig. 3b (214, 216, 218, 220 & 222)); and waiting to receive another IR message, if the update time stamp does not match the cache time stamp (fig. 3b (214, 226 & 222)).

Consider **claim 17**, and **as applied to claim 16 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, further comprising: replacing data stored in the transaction cache with the corresponding data in the IR message, if the corresponding data included in the IR message is associated with an update time stamp that is after the cache time stamp associated with the data stored in the cache (fig. 4b (164, 172, 174 & 168); column 8, lines 28-43).

Consider **claim 18**, and **as applied to claim 14 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, further comprising: confirming the transaction immediately (fig. 4b (164, 172, 174 & 168)), if all data requested by the executed read-only transaction have same cache time stamps; and delaying confirming the transaction until another IR message is received, if all data requested by the executed read-only transaction do not have the same cache time stamps (fig. 4b (fig. 3b (214, 226); column 6, lines 26-40)).

However, Barbara et al., does not specially disclose a read-only transaction. In the same field of endeavor, Krishnamurthy et al., clearly show a read-only transaction, which comprises a request for data (fig. 3 (301)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 19**, and **as applied to claim 16 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method as described.

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However, Barbara et al., does not specifically disclose a read-only transaction.

In the same field of endeavor, Krishnamurthy et al., clearly show a read-only transaction (fig. 3 (301)), further comprising: confirming a read-only transaction, if the read-only transaction does not request invalidated data, according to a received IR message (fig. 3 (301, 302 , 303 & 304)); and canceling a read-only transaction, if the read-only transaction requests invalidated data, according to a received IR message (fig. 3 (310, 302 & 305)).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to provide high degree of data consistency.

Consider **claim 20**, and **as applied to claim 16 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method, further comprising updating the transaction cache when an IR message is received (fig. 4b (160, 162, 164, 166 & 168); column 10, lines 25-32).

**Claims 2, 12 and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Barbara et al. (U.S. Patent # 5581704)**, in view of **Krishnamurthy et al. (U.S. Patent # 6578113)**, and further in view of **Anderson et al. (U.S. Patent # 5842216)**.

Consider **claim 2**, and **as applied to claim 1 above**, Barbara et al. clearly show and disclose the mobile client terminal (fig. 1 (12a); column 3, lines 35-38), comprising: a cache invalidation module for updating the transaction cache based on the information included in the IR message (fig. 2 (104, 106, 108 & 110)); a cache consistency module for maintaining transaction cache consistency by canceling transactions which are invalid according to the information included in the IR message (fig. 3b(214, 216, 218 & 220)); and a confirmation module for confirming or delaying execution of the transaction (fig. 3b; column 6, lines 25-27).

However Barbara et al. does not specially disclose data request transaction. In the same field of endeavor, Krishnamurthy et al. clearly shows a transaction execution module for executing the transaction (fig. 3; column 3, lines 51-67; column 4, lines 1-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the data request transaction, as taught by Krishnamurthy et al., in order to cover various situations that require data validation.

However Barbara et al., as modified by Krishnamurthy et al., fails to show the time stamp involved in the transaction. In the same field of endeavor, Anderson et al. clearly shows a time stamp execution module (fig.3; column 9, lines 18-22; fig.5; column 10, lines 1-13).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., handle the data request transaction, as taught by Krishnamurthy et al., and utilize the time stamp in the transaction, as taught by Anderson et al., in order to

guarantee data consistency in the network.

Consider **claim 12**, and **as applied to claim 7 above**, Barbara et al., as modified by Krishnamurthy et al., clearly show and disclose the method as described, However, Barbara et al., as modified by Krishnamurthy et al., does not show a read-only transaction.

In the same field of endeavor, Krishnamurthy et al., clearly shows the step of confirming comprises: determining whether all data requested by the read-only transaction is available (fig.3 (301, 302)), immediately confirming the read-only transaction (fig. 3 (302, 303, 304)); and delaying confirmation of the read-only transaction until a second IR message is received, if all data are not valid. (fig. 3 (302, 303, 305); column 3, lines 51-67; column 4, lines 1-21).

Therefore it would have been obvious to a person of ordinary skill in the art at the

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time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the read-only transaction, as taught by Krishnamurthy et al., in order to cover various situations that require data validation.

However, Barbara et al., as modified by Krishnamurthy et al., and Krishnamurthy et al., do not specially show the involvement of the time stamps in the read-only data transaction.

In the same field of endeavor, Anderson et al., clearly show and disclose the cache time stamp is considered in the determining if the confirmation can be made immediately or be delayed (fig. 5; column 10, lines 1-14).

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., handle the read-only transaction, as taught by Krishnamurthy et al., and utilize the time stamps in the confirmation process, as taught by Anderson et al., in order to guarantee data consistency in the network.

Consider **claim 21**, Barbara et al. clearly show and disclose a mobile communication network comprising mobile server (fig.1 (10a)) and mobile client terminals (fig. 1 (12a)) in communication with each other in at least one cell of the mobile communication network (fig. 1), wherein each mobile client terminal comprises a transaction cache (fig. 2 (106)), and wherein the transaction cache comprises data associated with a cache time stamp (fig. 4b (172 time stamp of datum)), and wherein the data stored in the transaction cache is associated with a cache time stamp (fig. 4b



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(162, 164 & 172);column 8, lines 28-38); and determining if an invalidation report (IR) message includes validation information associated with the data (fig. 4b (164)), the validation information including an update time stamp associated with the data; validating the data as stored in the cache, if the update time stamp is before the cache time stamp (fig. 4b (172,174)); and updating the requested data (fig. 4b (172, 166)), if the update time stamp is after the cache time stamp.

However, Barbara et al. do not specially disclose a file request from other mobile client. In the same field of endeavor, Krishnamurthy et al. clearly disclose receiving a request for data to be used in a transaction (fig. 3 (301)); determining whether the data is stored in the transaction cache (fig. 3 (302)); using the data if the data is stored in the transaction cache to execute the transaction (fig. 3 (302, 303 & 304)), retrieving the data from the mobile server, if the data is not stored in the transaction cache, and storing the data in the transaction cache in association with a corresponding (fig. 3 (302, 302 & 305));

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., and handle the data request transaction, as taught by Krishnamurthy et al., in order to cover the various situations that require data validation.

However, Barbara et al., as modified by Krishnamurthy et al., do not specially show the time stamp in the cache or the logic that drives the microcontroller to perform. In the same field of endeavor, Anderson et al. clearly disclose time stamp in the transaction cache (fig. 5 (60)) and the mobile client terminal comprising logic code (column 10, lines 27-30) embedded in a recording medium for execution by a microcontroller, wherein the execution of the logic code (column 10, lines 27-30) causes

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the microcontroller to perform.

Therefore it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate a mobile communication network, as taught by Barbara et al., handle the data request transaction, as taught by Krishnamurthy et al., and utilize the time stamp in the transaction, as taught by Anderson et al., in order to guarantee data consistency in the network.

### ***Conclusion***

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the

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Examiner should be directed to Sai-Ming Chan whose telephone number is (571) 270-1769. The Examiner can normally be reached on Monday-Thursday from 6:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

**Sai-Ming Chan**  
S.C./ sc

Mar 13, 2007

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A handwritten signature in black ink, appearing to read "George H. [unclear]". The signature is written in a cursive style with a large, sweeping flourish at the end.

Substitute for form 1449/PTO

# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

|                    |            |
|--------------------|------------|
| Application Number | 10/613,936 |
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|                    |                     |
|--------------------|---------------------|
| <b>Filing Date</b> | <b>July 2, 2003</b> |
|--------------------|---------------------|

|                      |               |
|----------------------|---------------|
| First Named Inventor | Sang Keun LEE |
|----------------------|---------------|

Art Unit 2861 2609

|               |               |
|---------------|---------------|
| Examiner Name | SAI-MING CHAN |
|---------------|---------------|

Attorney Docket Number 2080-3-45

U.S. PATENT DOCUMENTS

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**FOREIGN PATENT DOCUMENTS**

| Examiner Initials* | Cite No.        | Foreign Patent Document<br>Country Code Number Kind<br>Code (if known) | Publication<br>Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document | Pages Columns, Lines,<br>Where Relevant Passages<br>Or Relevant Figures<br>Appear | To |
|--------------------|-----------------|--|-----------------------------------|--|---|----|
|                    | /SC/            | JP 07-248968A  | 09/26/1995                        | Matsushita Electric Ind Co., Ltd.                  |   |    |
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| Examiner Signature | /Sai Ming Chan/ |  | Date Considered                   | 03/13/2007   |   |    |

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| Substitute for form 1449/PTO<br><br><b>INFORMATION DISCLOSURE<br/>STATEMENT BY APPLICANT</b><br><br>(Use as many sheets as necessary)  |             |  |                                   | Application Number                                 |  | 10/613,936  |    |
|  |             |  |                                   | Filing Date  |  | July 2, 2003  |    |
|  |             |  |                                   | First Named Inventor                               |  | Sang Keun Lee   |    |
|  |             |  |                                   | Art Unit   |  | 2412 2609   |    |
|  |             |  |                                   | Examiner Name                                      |  | Chan Sai Ming   |    |
|  |             |  |                                   | Attorney Docket Number                             |  | 2060-3-45   |    |
| Sheet  |             | 1  |                                   | of   |  | 1   |    |
| <b>U.S. PATENT DOCUMENTS</b>   |             |  |                                   |  |  |   |    |
| Examiner<br>Initials   | Cite<br>No. | Document Number<br>Number-Kind Code (if known)                         | Publication<br>Date               | Name of Patentee or<br>Applicant of Cited Document |  | Pages, Columns, Lines,<br>Where Relevant Passages or<br>Relevant Figures Appear   |    |
| SC   |             | US 5,263,156 A   | 11-16-1993                        | BOWEN et al.                                       |  |   |    |
| SC   |             | US 5,706,435 A   | 01-06-1998                        | BARBARA et al.                                     |  |   |    |
|  |             |  |                                   |  |  |   |    |
|  |             |  |                                   |  |  |   |    |
| <b>FOREIGN PATENT DOCUMENTS</b>  |             |  |                                   |  |  |   |    |
| Examiner<br>Initials*  | Cite No.    | Foreign Patent Document<br>Country Code Number Kind<br>Code (if known) | Publication<br>Date<br>MM-DD-YYYY | Name of Patentee or<br>Applicant of Cited Document |  | Pages Columns, Lines,<br>Where Relevant Passages<br>Or Relevant Figures<br>Appear | To |
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|  |             |  |                                   |  |  |   |    |
| <b>OTHER PATENT DOCUMENTS</b>  |             |  |                                   |  |  |   |    |
| RAHM E. et al.: "Distributed Optimistic Concurrency Control for High Performance Transaction Processing" DATABASES, PARALLEL ARCHITECTURES AND THEIR APPLICATIONS, PARBASE-90, INTERNATIONAL CONFERENCE ON MIAMI BEACH, FL, USA 7-9 MARCH 1990, LOS ALAMITOS, CA, USA, IEEE COMPUT. SOC., US., 7 March 1990 (1990-03-07), pages 490-495, XP010018779 ISBN: 0-8186-2035-8 |             |  |                                   |  |  |   |    |
| CAREY M J: "Improving the Performance of an Optimistic Concurrency Control Algorithm Through Timestamps and Versions" IEEE TRANSACTIONS ON SOFTWARE ENGINEERING, IEE SERVICE CENTER, LOS ALAMITOS, CA, US, vol. 8E-13, NO. 6, June 1987 (1987-06), pages 746-751, XP000743785 ISSN: 0098-5589  |             |  |                                   |  |  |   |    |
|  |             |  |                                   |  |  |   |    |
| SAI MING CHAN  |             |  |                                   | Date Considered 3/13/2007                          |  |   |    |

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|-----------------------------------|---------------------------------------|--|-------------|
| <b>Notice of References Cited</b> | Application/Control No.<br>10/613,936 | Applicant(s)/Patent Under<br>Reexamination<br>LEE, SANG KEUN |             |
|                                   | Examiner<br>Sai-Ming Chan             | Art Unit<br>2609   | Page 1 of 1 |

**U.S. PATENT DOCUMENTS**

| * |   | Document Number<br>Country Code-Number-Kind Code | Date<br>MM-YYYY | Name                 | Classification |
|---|---|--|-----------------|----------------------|----------------|
| * | A | US-5,581,704                                     | 12-1996         | Barbara et al.       | 711/141        |
| * | B | US-6,578,113                                     | 06-2003         | Krishnamurthy et al. | 711/141        |
| * | C | US-5,842,216                                     | 11-1998         | Anderson et al.      | 707/203        |
|   | D | US-  |                 |                      |                |
|   | E | US-  |                 |                      |                |
|   | F | US-  |                 |                      |                |
|   | G | US-  |                 |                      |                |
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